

**Notice of Allowability**

Application No.

10/791,233

Examiner

Henry S. Hu

Applicant(s)

KAPPLER ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE of November 30, 2005.
2. ☒ The allowed claim(s) is/are 7-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with **Thomas F. Roland (registration # 42,110, tel. 215 419-7314) on January 17, 2006** to amend parent Claim 7 as well as to cancel non-elected Claims 1-6 (Group I and Group II) as following:

**Claim 7** at lines 2-3 insert the phrase of "sodium acetate, a low surface-active additive at less than 300 ppm, " to be between "having" and "chain ends"

**Claim 7** at lines 5-6 remove the phrase of "sodium acetate, surface-active additive at less than 300 ppm,"

**Claims 1-6** please cancel Claims 1-6

### ***DETAILED ACTION***

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2. This Office Action is in response to faxed **RCE with Claim Amendment** filed on November 30, 2005. Only **Claim 7 was amended**. To be more specific, parent **Claim 7** was third time amended to incorporate additional two limitations as: (A) changing the scope to “a polyvinylidene fluoride (PVDF) composition comprising”, and (B) chain ends are written separately from surface-active additive” for claim clarification. The Applicants allege that support of claim amendment is as disclosed in detail on the top section of page 5 in Remarks. With above Examiner’s amendment, non-elected Claims 1-6 (Group I and Group II) were cancelled, while the further change of “surface-active additive” in parent Claim 7 to “a low surface-active additive” would make it clearly distinguished from the polymerization system using no surfactant at all.

In view of argument on page 5-6 of Remarks, **the Examiner withdraws ODP rejection** on Claims 7-11 over Claims 1-6 of copending Application No. 10/791,226 (USPG-PUB 2004/0225095 A1 to Kappler et al. and Claims 1-6 have been allowed on November 10, 2005) since at least a key step for atomizing the PDVF dispersion to remove surfactant is used by “226”. Since the Applicants have already canceled Claims 7-11 of the copending Application 10/791,226, **the 101 DP rejection is therefore removed. Claims 7-11 are now pending** with only one independent claim (Claim 7). An action follows.

3. Claim rejections under **Final** Office Action filed on **September 1, 2005** are now removed for the reasons given in paragraphs 4-11 thereafter.

***Allowable Subject Matter***

4. Claims 7-11 are allowed.
5. The following is an examiner's statement of reasons for allowance: The above Claims 7-11 are allowed over the closest references:
6. *The limitation of amended parent **Claim 7** of present invention relates to a polyvinylidene fluoride (PVDF) composition a polyvinylidene fluoride homopolymer or copolymer having sodium acetate, a low surface-active additive at less than 300 ppm, chain ends: -CF<sub>2</sub>-CH<sub>2</sub>-O-SO<sub>3</sub><sup>-</sup> originating from the use of the persulphate as initiator, and optionally a potassium alkylsulphonate. See other limitations of dependent Claims 8-11.*
7. In view of the Applicants' **RCE** as well as Examiner's Amendment with a total of "**four**" claim amendments, parent **Claim 7** now is in a very clear language with an amended scope of "**a polyvinylidene fluoride (PVDF) composition comprising**" a mixture (or blend) combination of: (A) **chain ends: -CF<sub>2</sub>-CH<sub>2</sub>-O-SO<sub>3</sub><sup>-</sup>** originating from the use of the persulphate as initiator, (B) **sodium acetate**, (C) **a low surface-active additive** at less than 300 ppm, and (D) optionally a potassium alkylsulphonate.

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After examining such a RCE amendment, the 103(a) rejection for Claims 7-9 by Blassie/Sharma now cannot stand as following: In a close view on pages 7-8 of Remarks, primary reference Blasie “709” only have added sodium acetate, potassium persulfate and a fluorinated emulsifier so as to prepare PVDF polymers, the key silent thing is how to reach the **claimed level of surfactant less than 300 ppm**. The secondary reference Sharma may have taught a surfactantless polymerization in making polymers from vinyl-containing monomers. A surfactantless polymer latex can be effectively obtained by using sulfo-polyester stabilizer with an advantage as a more durable and lasting coating composition may result since no surfactant is used. However, “no surfactant in polymerization” is quite different from “low degree of surfactant”, even it is at less than 300 ppm level.

8. As pointed out by the Applicants on page 7 in top section of Remarks, Blasie’s working examples 1-3 would certainly obtain polymer at level at least above 300 ppm surfactant. The key thing is that sodium salt of perfluorooctanoic acid used as a surfactant is added in the amount of **at least 550 ppm (by Applicants’ calculation)** for polymerization and with **no step for removal of said surfactant after polymerization** (see column 3, line 13-17). With respect to the secondary and/or tertiary references including Sharma “109” and Wu “251”, both references do not fix the deficiency of Blasie since no step of removal for surfactant is used at all.

9. Tertiary reference Wu in the other 103 rejection for dependent Claims 10-11 may have taught in the course of making various PVDF polymers, the alkylsulfonate salt can be added in polymerization process. By doing so, such alkylsulfonate-modified PVDF polymers are very

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useful in making polymer electrolyte as matrix polymer component. However, Wu cannot fix the deficiency of Blassie/Sharma since alkylsulfonate salt is not used as a surfactant.

Additionally, the present invention has shown in examples along with some comparative examples for making such a polyvinylidene fluoride “composition” (see **pages 11-14** for **examples 1-2 and controls 1-2** along with its **Tables 1-2**). Therefore, all the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention.

10. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

US Patent No. 5,543,259 to Schwarz et al. only discloses **an atomization step** to spray a composition comprising toner colorant and a coating material (may be a PVDF polymer) with a solvent by means of an air stream onto the airborne carrier particles (column 33, line 66 – column 34, line 16). **It is not used for purify PVDF polymers so as to remove surfactant.** Therefore, Schwarz fails to teach or fairly suggest the process of making PVDF of present invention.

11. The key issue on surfactant being at less than 300 ppm, regarding “a polyvinylidene fluoride (PVDF) composition comprising” a mixture (or blend) combination of: (A) chain ends:

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-CF<sub>2</sub>-CH<sub>2</sub>-O-SO<sub>3</sub><sup>-</sup> originating from the use of the persulphate as initiator, (B) sodium acetate, (C) a low surface-active additive at less than 300 ppm, and (D) optionally a potassium alkylsulphonate, cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.

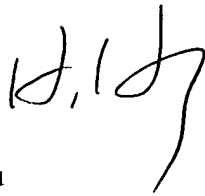
12. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, parent composition **Claim 7** was allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending dependent **Claims 8-11** are passed to issue.

13. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300 for all regular communications.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

January 17, 2006



DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700